

REMARKS/ARGUMENTS

Reexamination and reconsideration of this application as amended is requested. By this amendment, Claims 1 and 2 have been amended. After this amendment, Claims 1-27 remain pending in this application.

Claims Rejection under 35 U.S.C. § 112, second paragraph

(1-2) The Examiner rejected Claims 2, 12, and 24, under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Specifically, the Examiner indicated that the term "about", with respect to these claims, was indefinite. The Examiner cited MPEP 2173.05(b), and indicated that the term "about" was not defined in the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably appraised of the scope of the invention.

In accordance with the MPEP 2173, the term of degree "about" in claim language can still render such claim language as definite in view of the use of the term in the specification (providing the standard for ascertaining the requisite degree) and in view of the understanding of such a term by one of ordinary skill in the art.

The MPEP 2173 provides some guidance as follows.

The fact that claim language, including terms of degree, may not be precise, does not automatically render the claim indefinite under 35 U.S.C. 112, second paragraph. *Seattle Box Co., v. Industrial Crating & Packing, Inc.*, 731 F.2d 818, 221 USPQ 568 (Fed. Cir. 1984). Acceptability of the claim language depends on whether one of ordinary skill in the art would understand what is claimed, in light of the specification.

Further, specifically with respect to the term "about", the MPEP 2173 provides the following guidance.

The term "about" used to define the area of the lower end of a mold as between 25 to about 45% of the mold entrance was held to be clear, but flexible. Ex parte Eastwood, 163 USPQ 316 (Bd.App.1968). Similarly, in W.L.Gore & Associates, Inc. v. Garlock, Inc., 721 F.2d 1540, 220 USPQ 303 (Fed.Cir.1983), the court held that a limitation defining the stretch rate of a plastic as "exceeding about 10% per second" is definite because infringement could clearly be assessed through the use of a stopwatch. However, the court held that claims reciting "at least about" were invalid for indefiniteness where there was close prior art and there was nothing in the specification, prosecution history, or the prior art to provide any indication as to what range of specific activity is covered by the term "about." Amgen, Inc. v. Chugai Pharmaceutical Co., 927 F.2d 1200, 18 USPQ2d 1016 (Fed.Cir. 1991).

Applicants refer the Examiner to a relevant passage in the specification for a clarifying example using the term "about" in accordance with the use of that term in the rejected claims. See page 13, line 21, to page 14, line 22. Note that there are only two points, i.e., point L and point B, providing current input to the current mixing circuit 902 that then provides the mixed current signal 727 to the delay line 702, also as shown in FIGs. 7 and 9. The intent of the use of the term "about" in the claims and the specification should be clear to one of ordinary skill in the art as providing an indication of approximately or substantially a 95% of its value for the first current signal and approximately or substantially a 5% of its value for the second current signal.

The cited passage is provided below for quick reference.

"Referring to FIGs. 7 and 9, the Bias Adjust circuit block 726 will be discussed in more detail below. The Bias Adjust circuit block 726 comprises a mixer circuit 902. It takes inputs from the output 715 of the Voltage-to-Current converter 714, at point L, and the output 725 of the second Voltage-to-Current Converter 724, at point B. These inputs 715, 725, are first passed through respective weighting factor circuit blocks 904, 906, that adjust the level of current signal passed on to the mixer (current combining) circuit 902. The weighting factor circuit blocks 904, 906, preferably comprise transistor circuits with resistor ladders arranged

in current mirror topology to allow a portion of the respective input current signal to pass on to the mixing circuit 902. According to the present example, the output 715 of the Voltage-to-Current converter 714, at point L, passes to a weighting factor circuit block 904 that allows about 95% of the input current signal to pass to the mixing circuit 902. The output 725 of the second Voltage-to-Current Converter 724, at point B, passes to a weighting factor circuit block 906 that allows about 5% of the input current signal to pass to the mixing circuit 902. In this way, according to the present example, most of the bias current signal into the Delay Line 702 is from the first loop's Voltage-to-Current Converter 714, while a smaller portion of the bias current signal into the Delay Line 702 is from the second loop's Voltage-to-Current Converter 724. In this way, the Bias Adjust circuit block 726 maintains the Delay Line circuit 702 to run very near the frequency of the VCO 716. With the B input 725 to the Bias Adjust circuit 726, the Delay Line 702 can more precisely adjust the output signal of the Delay Line 702 to match the frequency of the signal from the VCO 716. Hence, the signal at the B input 725 compensates the matching differences between VCO 716 and the Delay Line circuit 702." (Emphasis added.)

Applicants have amended dependent claim 2 to more clearly and affirmatively recite that the weighting of the first current signal is by about 95% of its value and that the weighting of the second current signal is by about 5% of its value. This more clearly and affirmatively recites that the weighted current signal is a reduced percentage of the respective current signal value. That is, the weighted first current signal is about 95% of the first current signal value and the weighted second current signal is about 5% of the second current signal value. Support for this amendment may be found in the specification, such as discussed above with reference to the specification from page 13, line 21, to page 14, line 22. No new matter was added.

In view of the amendment to Claim 2 and the remarks above, Applicants believe that the rejection of Claims 2, 12, and 24, under 35 U.S.C. § 112, second paragraph, as discussed above, has been overcome. Applicants kindly request that the Examiner withdraw the rejection of Claims 2, 12, and 24.

Claim Rejections - under 35 USC § 102

(3-4) The Examiner rejected Claim 1 under 35 U.S.C. 102(e) as being anticipated by Lee et al. (U.S. Patent 6,326,826).

Applicants have amended Claim 1 to more clearly and distinctly recite the present invention. The generation of the second current signal (representative of the phase comparison) is now more clearly and distinctly recited in Claim 1 as being continuous. That is, the operation of that circuit is continuous. For example, see the specification from page 12, line 1, to page 13, line 19, with special emphasis to page 12, lines 18-21. No new matter was added by this amendment.

The relevant exemplary passage in the specification has been provided below for quick reference.

"The first loop 708, 710, 712, 714, and 716, comprises a phase lock loop that adjusts a current signal at the output 715 of the Voltage-to-Current Converter 715, at point L, based on the PFD 708 comparing a signal from the Clock in input 704 to a signal from the output 717 of the VCO 716. Due to this new architecture 700, a phase error introduced in the first loop due to frequency, power supply, temperature, and process can be neglected. The current signal at the output 715 of the Voltage-to-Current Converter 715, at point L, provides a bias current, at the input 727 of the Delay Line 702 that adjusts the speed of operation of the delay line elements. The bias current at the input 727 of the Delay Line 702 is provided by a Bias Adjust circuit 726 that combines the bias current output 715 of the Voltage-to-Current Converter 715 with the current signal at the output 725 of the second Voltage-to-Current circuit 724 that is part of the second loop. Because only the bias current information is passed over from the first loop to the second loop, as long as the first loop is locked to the input clock frequency at the Clock in line 704, the bias current at the input 727 of the Delay Line 702 is set to the correct value. The second loop continuously adjusts the current signal at the output 725 of the second Voltage-to-Current circuit 724 to combine in the Bias Adjust circuit 726 with the current signal from the output 715 of the Voltage-to-Current Converter 715.

The second loop combines the bias current from the output 715 of the Voltage-to-Current 714 of the first loop via the Bias Adjust circuit block 726. In the first loop, the Phase Detector circuit block 720 compares the phase difference between the input clock signal at the input 704 and output signal at the output 706 of the delay line 702. The current signal at the output 725 of the second Voltage-to-Current Converter 724 provides an adjustment current signal into the Bias Adjust circuit block 726. This adjustment current signal is very responsive to the slight variations of the timing of the delay elements of the Delay Line 702. It provides quick feedback via the Bias Adjust circuit block 726 to adjust the timing of the Delay Line 702. The adjustment current signal at the output 725 of the second Voltage-to-Current Converter 724 can quickly increase or decrease the bias current at the input 727 of the Delay Line 702 and thereby quickly adjust the speed of the delay line elements to track the speed of the Clock in signal at the input 704 of the Delay Line 702. A delay line system according to a preferred embodiment of the present invention, therefore, provides a close tracking of an input clock signal at the input 704 by use of the two loops. The first loop locks in to, and closely tracks, the wide band frequency adjustment of the clock in signal, while the second loop is very responsive to adjustments of the signal timing due to the delay line 702. This is an important advantage of the present invention that is not found in known prior art delay line systems.”
(Emphasis added.)

On the other hand, in Lee, with reference to FIG. 1, the phase detector 13 and the charge pump 15 do not continuously provide an output signal. See column 2, lines 63-65. The phase detector 13 is disabled and the charge pump 15 doesn't contribute to the loop operation.

Therefore, in view of the amendment and remarks above, Applicants believe that since Lee does not teach, anticipate, or suggest, the presently claimed continuous generation of the second current signal (representative of the phase comparison), the rejection of Claim 1 under 35 U.S.C. 102(e) has been overcome. The Examiner should withdraw the rejection of this claim. Additionally, Claim 1, and the dependent claims depending therefrom, respectively, are all in condition for allowance, and Applicants request that the Examiner allow all of these claims to issue as a patent.

Claim Rejections - 35 USC § 103

(5-6) The Examiner rejected Claim 2 under 35 U.S.C. 103(a) as being unpatentable over Lee et al. (U.S. Patent 6,326,826).

Applicants have amended independent Claim 1 to more clearly and distinctly recite the present invention. Amended Claim 1 more clearly and distinctly recites that the generation of the second current signal (representative of the phase comparison) is continuous. That is, the operation of that circuit is continuous. Please also see the discussion above in numbered section (3-4) with respect to amended Claim 1. No new matter was added. Also, Claim 2 was amended to more clearly and affirmatively recite claim language. Please see the discussion above in numbered section (1-2). No new matter was added.

Claim 2 depends from amended Claim 1 and, since dependent claims recite all of the limitations of the independent claim, it is believed that, therefore, this claim also recites in allowable form.

Accordingly, in view of the amendments and remarks above, since Lee does not teach, anticipate, or suggest, the presently claimed continuous generation of the second current signal (representative of the phase comparison), Applicants believe that the rejection of Claim 2 under 35 U.S.C. 103(a) has been overcome. The Examiner should withdraw the rejection of this claim. Additionally, Claim 2 is in condition for allowance, and Applicants request that the Examiner allow this claim to issue as a patent.

(7) The Examiner rejected Claim 3 under 35 U.S.C. 103(a) as being unpatentable over Lee et al. (U.S. Patent 6,326,826) in view of Krzyzkowski (U.S. Patent 6,131,168). The cited Krzyzkowski reference was combined with the cited Lee reference to attempt to obviate the adjusting of the timing of the strobe output signals.

Applicants have amended independent Claim 1 to more clearly and distinctly recite the present invention. Amended Claim 1 now recites the generation of the second current signal (representative of the phase comparison) is continuous. That is, the operation of that circuit is continuous. Please also see the discussion above in numbered section (3-4) with respect to amended Claim 1. No new matter was added.

As has been discussed above, the Lee cited reference does not teach, anticipate, or suggest, the continuous generation of the second current signal, as recited for amended independent Claim 1. Note also that the Krzyzkowski reference was cited to attempt to obviate the claim limitation of adjusting of the timing of the strobe output signals in dependent Claim 3. However, this second cited reference also does not teach, anticipate, or suggest the combined elements of amended Claim 1 and including the continuous generation of the second current signal, as recited for amended independent Claim 1. It should clear, in view of the present discussion, that the cited references, either taken singly or in any combination thereof, do not teach, anticipate, or suggest, the claimed continuous generation of the second current signal, as recited for amended independent Claim 1. Since Claim 3 depends from amended Claim 1 and, since dependent claims recite all of the limitations of the independent claim, it is believed that, therefore, Claim 3 also recites in allowable form.

Accordingly, in view of the amendments and remarks above, since neither Lee, Krzyzkowski, nor any combination thereof, teaches, anticipates, or suggests, the presently claimed continuous generation of the second current signal (representative of the phase comparison), Applicants believe that the rejection of Claim 3 under 35 U.S.C. 103(a) has been overcome. The Examiner should withdraw the rejection of this claim. Additionally, Claim 3 is in condition for allowance, and Applicants request that the Examiner allow this claim to issue as a patent.

Allowable Subject Matter

(8-9) The Examiner objected to Claims 12 and 24, but indicated that these claims would be allowable if rewritten to overcome the rejection under 35 U.S.C. 112, second paragraph, and in independent form including all limitations of the base claim and any intervening claims.

First of all, Applicants acknowledge that the Examiner has allowed original Claims 4-11, 13-23, and 25-27. These allowed claims include independent Claims 4 and 16.

With respect to dependent Claims 12 and 24, Applicants believe that they have addressed the rejections under 35 U.S.C. 112, second paragraph, by Applicants' remarks above as provided in numbered section (1-2). Additionally, since dependent claims 12 and 24 depend from allowed independent Claims 4 and 16, respectively, it is believed that these dependent claims are in allowable form. Therefore, Applicants submit that Claims 12 and 24 are allowable, and request that the Examiner allow these claims to issue.

Conclusion

The foregoing is submitted as full and complete response to the Official Action mailed November 19, 2003, and it is submitted that Claims 1-27 are in condition for allowance. Reconsideration of the rejection is requested. Allowance of Claims 1-27 is earnestly solicited.

No amendment made was related to the statutory requirements of patentability unless expressly stated herein. No amendment made was for the purpose of narrowing the scope of any claim, unless Applicants have argued herein that such amendment was made to distinguish over a particular reference or combination of references.

Applicants acknowledge the continuing duty of candor and good faith to disclosure of information known to be material to the examination of this application. In accordance with 37 CFR §§ 1.56, all such information is dutifully made of record. The foreseeable equivalents of any territory surrendered by amendment are limited to the territory taught by the information of record. No other territory afforded by the doctrine of equivalents is knowingly surrendered and everything else is unforeseeable at the time of this amendment by the Applicants and the attorneys.

The present application, after entry of this amendment, comprises twenty seven (27) claims, including three (3) independent claims. Applicants have previously paid for twenty (27) claims including three (3) independent claims. Applicants, therefore, believe that an additional fee for claims amendment is currently not due.

However, a petition for extension of time to file this Response has been attached. The Commissioner is authorized to charge the extension fee for response of \$110, or if this fee amount is insufficient, then the Commissioner is authorized to charge the appropriate fee amount to prevent this application from becoming abandoned to Deposit Account 50-1556.

If the Examiner believes that there are any informalities that can be corrected by Examiner's amendment, or that in any way it would help expedite the prosecution of the patent application, a telephone call to the undersigned at (561) 989-9811 is respectfully solicited.

The Commissioner is hereby authorized to charge any fees that may be required or credit any overpayment to Deposit Account 50-1556.

In view of the preceding discussion, it is submitted that the claims are in condition for allowance. Reconsideration and re-examination is requested.

Respectfully submitted,

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By: Jose Gutman

Jose Gutman

Reg. No. 35,171

**Please send all correspondence concerning
this patent application to:**

Jose Gutman, Esq.
FLEIT, KAIN, GIBBONS, GUTMAN
BONGINI & BIANCO P.L.
551 N.W. 77th Street, Suite 111
Boca Raton, FL 33487
Tel (561) 989-9811
Fax (561) 989-9812